

Serial No. 10/219,597

2. Remarks

Claim 64 has been added by the present amendment. The Office is hereby authorized to charge Deposit Account 50-2454 of Nanostream, Inc. for the added claim fee of \$25.00 pursuant to 37 CFR 1.16(i), and to similarly charge Deposit Account 50-2454 for any other fee necessary to enter the present Amendment.

In the October 19, 2005 Office Action, the Examiner imposed a restriction requirement against claims 1-63 pending in the application, between:

- Claims 1-35, drawn to a data correction method (Group I); and
- Claims 36-63, drawn to a method and apparatus for correcting retention times in multi-column chromatography (Group II).

The Examiner indicated that Group I and claims 36-52 of Group II were related as a combination and subcombination (Office Action, page 2), and that Group 1 and claims 53-63 were related as process and apparatus for its practice (Office Action, page 3).

The Examiner further indicated that Group I contained two species: a first species as disclosed in paragraph 0084 and Figure 13 appearing to be embodied in claims 1-20, and a second species as disclosed in paragraph 00119 and Figure 14 appearing to be embodied in claims 21-35. (Office Action, pp. 4-5). The Examiner stated that Applicant's reply must include an identification of species elected consonant with this requirement.

In response to the restriction requirement, Applicants elects Group II, claims 36-63. Such election is WITH TRAVERSE.

Since the species identification requirement applied solely to Group I, and Applicants have elected Group II, it is believed that the species identification requirement is moot.

The traversal of the restriction requirement is based on the fact that the stated grounds for the restriction do not comport with the requirements of the 35 USC 121, which requires that:

Serial No. 10/219,597

"[I]f two or more independent and distinct inventions are claimed in one application, the Director may require the application to be restricted to one of the inventions."

The statute therefore requires as a basis for legally permissible restriction that the subject matter of respective claims be both independent and distinct.

Claim 21, which is representative of Group I, is set out below for ease of reference:

21. A multi-column liquid chromatography data correction method comprising the steps of:

providing a plurality of liquid chromatography columns in fluid communication with a common mobile phase source, each column of the plurality of columns containing a stationary phase material, wherein the mobile phase source supplies mobile phase to the plurality of columns at a selected mobile phase source output flow rate;

providing at least one detector in sensory communication with the plurality of columns;

supplying a calibrant having at least a first component to each column of the plurality of columns;

eluting the at least a first component of the calibrant in each column of the plurality of columns according to a first mobile phase source output flow rate and a first mobile phase composition profile;

measuring, for each column of the plurality of columns, a first physical parameter using the at least one detector;

deriving, for each column of the plurality of columns, at least one correction factor based on the first physical parameter;

supplying, to each column of the plurality of columns, at least one sample containing a plurality of sample components;

eluting at least two components of the plurality of sample components of the at least one sample in each column of the plurality of columns to obtain raw chromatographic data; and

applying, for each column of the plurality of columns, the at least one correction factor to the raw chromatographic data to yield corrected chromatographic output data.

Serial No. 10/219,597

Claim 36, which is representative of Group II, requires:

36. A method for correcting retention times in multi-column liquid chromatography, the method comprising the steps of:

providing a plurality of liquid chromatography columns in fluid communication with a common mobile phase source, each column of the plurality of columns containing a stationary phase material and having an associated detection region, wherein the mobile phase source supplies mobile phase to the plurality of columns at a selected mobile phase source output flow rate;

providing, for the detection region associated with each column of the plurality of columns, a detector in sensory communication with the detection region;

supplying a first calibrant to each column of the plurality of columns, wherein the first calibrant contains at least a first component and a second component, with each of the first component and second component having different retention characteristics relative to the stationary phase material;

eluting the at least first component and second component in each column of the plurality of columns according to a first mobile phase source output flow rate and a first mobile phase composition profile;

measuring, for each column of the plurality of columns, a first time for the first component to reach the associated detection region and a second time for the second component to reach the associated detection region;

deriving, for each column of the plurality of columns, at least one correction factor based on at least one of the first time and the second time;

supplying, to each column of the plurality of columns, at least one sample containing a plurality of sample components;

eluting at least two components of the plurality of sample components of the sample in each column of the plurality of columns to obtain raw chromatographic data; and

Serial No. 10/219,597

applying, for each column of the plurality of columns, the at least one correction factor to the raw chromatographic data to yield corrected chromatographic data with corrected retention times.

It is apparent from comparison of claims 21 and 36 that the subject matter of these claims includes as common subject matter the following elements:

<u>Claim 21 Limitation</u>	<u>Claim 36 Limitation</u>	<u>Remarks</u>
providing a plurality of liquid chromatography columns in fluid communication with a common mobile phase source	providing a plurality of liquid chromatography columns in fluid communication with a common mobile phase source	(Identical subject matter)
each column of the plurality of columns containing a stationary phase material	each column of the plurality of columns containing a stationary phase material	(Identical subject matter)
providing at least one detector in sensory communication with the plurality of columns	providing, for the detection region associated with each column of the plurality of columns, a detector in sensory communication with the detection region	(Highly similar subject matter)
the mobile phase source supplies mobile phase to the plurality of columns at a selected mobile phase source output flow rate	the mobile phase source supplies mobile phase to the plurality of columns at a selected mobile phase source output flow rate	(Identical subject matter)
providing at least one detector in sensory communication with	providing, for the detection region associated with each	(Highly similar subject matter)

Serial No. 10/219,597

the plurality of columns	column of the plurality of columns, a detector in sensory communication with the detection region	
supplying a calibrant having at least a first component to each column	supplying a first calibrant to each column ... wherein the first calibrant contains at least a first component	(Highly similar subject matter)
eluting the at least a first component of the calibrant in each column of the plurality columns according to a first mobile phase source output flow rate and a first mobile phase composition profile	eluting the at least first component and second component in each column of the plurality of columns according to a first mobile phase source output flow rate and a first mobile phase composition profile	(Highly similar subject matter)
measuring, for each column of the plurality of columns, a first physical parameter using the at least one detector	measuring, for each column of the plurality of columns, a first time for the first component to reach the associated detection region ...	In the Detailed Description, it is specifically contemplated that physical parameters may be measured as a function of time to derive retention time. "The output of a chromatographic separation is a plot called a chromatogram, which is a graphical or other representation of the response of a detector to a property of the effluent versus time. For example, if UV-visible ("UV-VIS") detection is used, then a chromatogram may include a plot of absorbance units versus time." [0021] "Examples of physical parameters subject to

Serial No. 10/219,597

		<p>measurement include, but are not limited to: flow, pressure, temperature, optical properties (including absorbance, fluorescence, optical scattering, and evaporative light scattering), electrical properties (conductivity, resistance, capacitance), molecular weight, molecular composition, and elemental composition. <u>Physical parameter measurements may be recorded as a function of time</u>; thus, many physical parameters or values derived therefrom may be recorded as profiles or integrated (aggregate) values for each fluid process region (e.g., flow profile, pressure profile, temperature profile, voltage profile, current profile, molecular weight profile, etc.).” ¶[0082] (emphasis added).</p>
deriving, for each column of the plurality of columns, at least one correction factor based on the first physical parameter	deriving, for each column of the plurality of columns, at least one correction factor based on at least one of the first time and the second time	(Highly similar subject matter)
supplying, to each column of the plurality of columns, at least one sample containing a plurality of sample components	supplying, to each column of the plurality of columns, at least one sample containing a plurality of sample components	(Identical subject matter)

Serial No. 10/219,597

eluting at least two components of the plurality of sample components of the at least one sample in each column of the plurality of columns to obtain raw chromatographic data	eluting at least two components of the plurality of sample components of the sample in each column of the plurality of columns to obtain raw chromatographic data	(Identical subject matter)
applying, for each column of the plurality of columns, the at least one correction factor to the raw chromatographic data to yield corrected chromatographic output data	applying, for each column of the plurality of columns, the at least one correction factor to the raw chromatographic data to yield corrected chromatographic data with corrected retention times	(Highly similar subject matter)

The Examiner's attention is directed in this respect to the provisions of MPEP Section 802.01 (Meaning of "Independent" and "Distinct"), which states, *inter alia*:

"The term 'independent' (i.e., not dependent) means that there is no disclosed relationship between the two or more subjects disclosed, that is, they are unconnected in design, operation, or effect..."

It is apparent from this provision of the MPEP that the subject matter of Group I representative claim 21 and Group II representative claim 36 is not "independent" within the meaning of 35 USC 121 in the respective claims (*i.e.*, subject matter CANNOT BE CHARACTERIZED as being "unconnected in design, operation or effect" pursuant to MPEP Section 802.01), and that therefore Groups I and II are NOT properly restricted.

Further in support of the lack of independence between the subject matter of Group I representative claim 21 and Group II representative claim 36 is found in the preamble of the claims. Claim 21 is directed to a "multi-column liquid chromatography data correction method." Claim 36 is directed to a "method for correcting retention times in multi-column liquid

Serial No. 10/219,597

chromatography." The commonality of these limitations points to the interrelatedness of the claims.

Based on all the foregoing, it is requested that the restriction requirement be withdrawn.

Further, it is pointed out that the subject matter of the respective claims imposes no serious burden of searching on the Examiner owing to the commonality of the design, operation, and effect of the subject matter of the claims.

According to the MPEP section 803:

"[I]f the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions." MPEP §803.

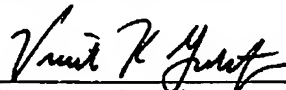
Under the applicable criterion of this MPEP provision, the Examiner is required to submit all claims 1-64 to examination on the merits.

Nonetheless, if the Examiner persists in requiring restriction of the claims, Applicant reserves the right to request rejoinder of the nonelected method claims pursuant to MPEP 821.

Conclusion

Substantive examination of all claims 1-64 is respectfully requested. If any issues remain outstanding incident to this Amendment, the Examiner is requested to contact the undersigned attorney at (919) 419-9350 to discuss the same, in order to expedite prosecution of the application.

Respectfully submitted,



Vincent K. Gustafson
Reg. No. 46,182
Attorney for Applicants

INTELLECTUAL PROPERTY/
TECHNOLOGY LAW
P.O. Box 14329
Research Triangle Park, NC 27709
Phone: (919) 419-9350
Fax: (919) 419-9354
Attorney File No.: 4270-135